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Last week's flooding along the Des Plaines River sparked memories of the twin deluges of 1986 and '87, while raising questions as to why the lessons of 20 years ago couldn't prevent a repeat.

Experts say stormwater improvements inspired by those '80s floods aren't complete even now. Even if they were, they wouldn't necessarily have been able to hold back the downpour of Sept. 13.

The '86 flood was caused by days of rain that made the river level rise gradually. On Oct. 1, 1986, it crested in Des Plaines at 2 feet above the previous 1938 record and took a week to recede from thousands of homes and businesses.

The storm of Aug. 13-14, 1987, was a more sudden onslaught, with 9-plus inches of rain reported in 18 hours at O'Hare International Airport.

That deluge caused even more regional damage - and inspired officials not to take catastrophic flooding as isolated, once-in-a-lifetime events.

The recent storm was like a combination of '86 and '87, said Des Plaines Director of Engineering Tim Oakley. While caused by a single, deluge like in '87, it had its strongest effect on the river, similar to but not as bad as '86.

Oakley and other water resource experts believe improvements since the '80s did make some things better last week. But they said one big lesson of the recent storm was that you can never completely prepare for Mother Nature.

Arlan Juhl, division manager of the Illinois Department of Natural Resources' water resources

office, said much of the stormwater infrastructure in the hardest-hit areas is designed to handle up to 6 inches of rain in 24 hours.

"The design capacities were certainly challenged, if not exceeded," Juhl said.

He appreciates politicians' efforts to stay focused on a solution for so many years but understands that "people who have water in their homes feel more like victims than beneficiaries."

Adequate response?

Still, many people believe that property owners, local officials and systems already in place handled an impossible situation quite well.

Christopher Burke of Christopher B. Burke Engineering in Rosemont said enough rain fell Sept. 13 to overwhelm any natural or man-made drainage system. When soil is saturated, it can't absorb any more water than a parking lot can.

"It doesn't make any difference whether it's asphalt or cornfields," Burke said. "There's no one to blame."

The only thing that could've helped more is additional stormwater storage upstream of problem areas, he said.

He believes about 10,000 acre-feet of stormwater capacity upstream might be required. An acre-foot is the amount of water that would fill an acre of land one foot deep.

The Army Corps of Engineers is looking for ways to reduce storm damage and improve water quality along the Des Plaines River from Racine, Wis., to Brookfield, spokeswoman Lynne Whelan said.

Also, negotiations for the use of Wheeling's Heritage Park for a Buffalo Creek Reservoir have been going on for some time. Wheeling Trustee Patrick Horcher said his family has put its 50-acre farm forward as a potential Plan B if a deal with the Wheeling Park District can't be worked out.

"If they sent the right people, I think we could work out a deal in a day," he said.

"It would have helped us," says U.S. Rep. Mark Kirk, a Highland Park Republican. "Buffalo Creek Reservoir would delay the onset of flooding in Mount Prospect and Des Plaines. My hope is that we quickly resolve the bickering over its site."

The search for additional stormwater capacity is part of a broader study of the river than one completed in 2000 that recommended building two levees, Whelan said.

Did new levee help?

One of them, Levee 50, has just been completed in Des Plaines. It was used to full effect last weekend in controlling over-bank flooding and keeping properties nearby from being drowned.

Oakley said the new pumps and the levee wall in combination held back enough water to spare about 400 homes and businesses in the Des Plaines area from taking in water.

Construction of the other recommended levee, No. 37, is expected to be built within two years and ultimately help the area near the Mount Prospect-Prospect Heights line.

Had Levee 37 been in place, it would've saved the efforts of local crews who built a 1,500-foot wall along the river in 12 hours - finishing a mere hour before the water reached it, Mount Prospect Village Engineer Jeff Wulbecker said.

Burke said there's also a new reservoir at O'Hare that provides 1,000-plus acre-feet of capacity and holds back water that would otherwise flow rapidly into Willow Creek.

Another project not yet complete - and the subject of many misconceptions - is the Deep Tunnel. Unlike the levees, over-bank flooding is something the Deep Tunnel was never meant to address.

Tim Loftus, water resources senior planner for the Chicago Metropolitan Agency for Planning, said the Deep Tunnel's main function is additional storm sewer capacity.

Designed in the '70s, the tunnel's 109 miles were complete only this decade. Its full effect won't be felt until two more reservoirs are finished.

During last week's storm, the Deep Tunnel, as well as the Metropolitan Water Reclamation District's entire storm sewer system, was "taxed to the max," said district spokeswoman Jill Horist. The tunnel stores 405 million gallons of water, but the district recorded 101 billion gallons across Cook County.

Under more normal circumstances, the district would have been able to divert water from heavily to less affected areas. But this storm was widespread enough that there were few places to move water.

"When you get a storm of this magnitude," Loftus said, "it just overwhelms everything."

Long-range solutions

Even if last weekend's rains were extraordinary, some still might ask why flood protections inspired 22 years ago are still incomplete in 2008.

Loftus said solving river flooding is costly and complex, involving multiple agencies and sources of funding that are always burdened by new challenges and priorities.

Not only do local towns have to decide yearly how best to spend their limited funds, but federal dollars are competing among larger-scale disasters like hurricanes, Loftus said.

"I think there's a great coordination going on, locally, statewide and nationally," said state Sen. Dan Kotowski, a Park Ridge Democrat. "There's only so much that government can do when there's rainfall like this. It takes time and resources and money, but people are strongly committed to get things done."

But Des Plaines Mayor Tony Arredia still questions why it's taken more than 20 years for the various parties involved to resolve the problems made obvious in 1986.

"If we spent the same amount of time as we do defending why we can't do something," he said, "we'd probably be doing more than we are now."